

# BULLETIN

## OF THE INSTITUTE OF METALS

VOLUME 4

MAY 1959

PART 21

### INSTITUTE NEWS

#### Award of Institute Medals

The Council of The Institute of Metals has made the following awards of medals:

*The Institute of Metals (Platinum) Medal* to Dr. Leonard Bessemer PFEIL, O.B.E., A.R.S.M., F.I.M., F.R.S. (Director, The Mond Nickel Co., Ltd.) in recognition of his outstanding contributions to non-ferrous metallurgical science and to the non-ferrous metals industries.

*The Rosenhain Medal* to Professor Robert William Kerr HONEYCOMBE, M.Sc., Ph.D. (Professor of Physical Metallurgy, University of Sheffield) in recognition of his outstanding contributions in the field of physical metallurgy.

*The W. H. A. Robertson Medal and Premium* to Dr. Raymond Bernard SIMS, M.I.Mech.E., A.Inst.P. (Chief Engineer, Davy and United Engineering Co., Ltd.) for a paper on "Automatic Gauge Control in Rolling Mills" (*J. Inst. Metals*, 1957-58, 86, 289).

The Institute of Metals (Platinum) Medal is presented annually by The Mond Nickel Co., Ltd., the Rosenhain Medal by Imperial Chemical Industries, Ltd., and the W. H. A. Robertson Medal and Premium by W. H. A. Robertson and Co., Ltd., Bedford.

#### Dr. L. B. Pfeil

(Institute of Metals (Platinum) Medallist 1959)

After graduation from the Royal School of Mines, and some years as Lecturer in Metallurgy in the University College of Swansea, Dr. Pfeil in 1930 became Assistant Manager of the Research and Development Department of The Mond Nickel Co., Ltd. During the next fifteen years, in the Company's Birmingham Laboratory, he directed a wide range of research on ferrous and non-ferrous materials, including the constitution of alloys, age-hardening, high-temperature materials, the transformation characteristics of steels and their response to heat-treatment, and powder metallurgy. During the war period, when the activities of the laboratory were concentrated on the national effort, Dr. Pfeil directed the research on high-temperature alloys for aircraft gas turbines which led to the development of the Nimonic series of alloys. He was in charge also of investigations on steel, cast iron, and other materials required by the Services.

In 1945 he succeeded Sir William Griffiths as Manager of the Development and Research Department, and in 1955 relinquished this position to devote his full time to Directorship of The Mond Nickel Co., Ltd. and its associate, Henry

Wiggin and Co., Ltd., to the Boards of which he had been appointed in 1951.

Dr. Pfeil's outstanding scientific work has been matched by generous contributions in time and effort to the progress and well-being of the Institute of Metals, to the advance of the profession of metallurgy, and to the co-operative research efforts of the industry through the metallurgical research associations. He has served on the Council and Research Committees of the British Non-Ferrous Metals Research Association, the British Cast Iron Research Association, and the British Iron and Steel Research Association. Other extramural activities have included membership of the Inter-Service Metallurgical Research Council and the Metals



Economy Advisory Committee to the Minister of Supply. He has also taken an active interest in scientific and technical education.

Dr. Pfeil's membership of the Institute of Metals dates from 1923. After various periods of service on the Council and a number of Committees, he became President for the year 1957-1958. He is a Fellow of the Institution of Metallurgists, of which he was President in the year 1953-54. He is a Member of Council of the Iron and Steel Institute, of which Institute he has been a member since 1926.

Dr. Pfeil was appointed to the O.B.E. in 1947, and in 1951 he was elected a Fellow of the Royal Society.

**Professor R. W. K. Honeycombe**  
(Rosenhain Medallist 1959)

R. W. K. Honeycombe was born in 1921 in Melbourne, Australia. He was educated at Geelong College and the University of Melbourne, where he obtained the B.Sc. degree in 1941, and M.Sc. degree in the School of Metallurgy in 1942. His first research was on the formation of tungsten



carbide-cobalt alloys, carried out under the direction of Professor J. Neill Greenwood at the University of Melbourne. From 1942 to 1947 he was a Research Officer in the Lubricants and Bearings Section (now the Division of Tribophysics) of the Commonwealth Scientific and Industrial Research Organization, where, under Dr. F. P. Bowden, he worked in two main fields, bearing alloys and the plastic deformation of metals. He collaborated with Dr. W. Boas in researches which led to an appreciation of the role of the anisotropy of thermal expansion in causing stresses and plastic deformation in non-cubic metals when they are thermally cycled.

When he went to Cambridge on an I.C.I. Fellowship in 1948, he became interested in the deformation of metal single crystals and made use of metallographic and X-ray techniques to study, in particular, inhomogeneities such as deformation bands. The work was continued during his tenure of the Royal Society Armourers' and Braziers' Fellowship. He obtained the degree of Ph.D. in 1950.

Dr. Honeycombe was appointed Senior Lecturer in Physical Metallurgy at Sheffield University in 1951, and there he helped to develop the Postgraduate School of Physical Metallurgy. In 1955 he was appointed to the Chair of Physical Metallurgy. At Sheffield he has maintained his interest in metal single crystals and has led a series of investigations into the deformation of alloy crystals, including dilute solid solutions and precipitation-hardening crystals. At the same time, the predominant ferrous interests of the neighbourhood could not be ignored, so studies on carbide precipitation in alloy steels were initiated using the electron microscope. This work has led in particular to a better understanding of the phenomenon of secondary hardening during tempering. New electron-microscopic methods have also been applied to

the study of intergranular fracture in alloy steels and have allowed the fracture surfaces to be examined in great detail. Other current research interests include recrystallization, fatigue, and ductile fracture.

He has two hobby-horses. First, he believes firmly that the single-crystal approach is the best way to tackle many fundamental metallurgical phenomena, and secondly that metallography (in the broad sense) is the life-blood of physical metallurgy. He is delighted to see that in recent years solid-state physicists have taken to looking intelligently down microscopes!

**Dr. R. B. Sims**

(W. H. A. Robertson Medallist 1958)

R. B. Sims graduated at London University in Physics and Mathematics and then served for seven years as a meteorologist in the Royal Air Force. On demobilization he served an engineering apprenticeship with Baker Perkins, Ltd., Peterborough, and in 1948 he became Head of the Rolling Mill Laboratories of the British Iron and Steel Research Association. He was appointed Research Manager to Davy-United Engineering Co., Ltd., of Sheffield, in January 1953 and subsequently was made Research Manager of the Company's Instrument Division. He was appointed Chief Engineer of Davy-United in December 1958.

Dr. Sims was awarded the Robertson Medal for his paper on "Automatic Gauge Control in Rolling Mills" published



in the *Journal* last year. The principles of automatic gauge control were formulated while Dr. Sims was at B.I.S.R.A., and the inventions were guided through their works prototype stage and eventually brought into a marketable form while he was in the Instrument Division of Davy-United.

**"Metallurgical Reviews"**

The latest issue of *Metallurgical Reviews* (Vol. 4, No. 13) contains: "The Growth of Metal Single Crystals", by R. W. K. Honeycombe and "Progress in Micro-Indentation Hardness Testing", by H. Bückle.

### Election of Members

The following 14 Ordinary Members, 4 Junior Members, and 13 Student Members were elected on 11 March 1959:

#### *As Ordinary Members*

- AKERLOW, Earl V., Professional Consulting Engineer, P.O. Box 421, Oakland 4, Calif., U.S.A.
- BAIL, Dennis, B.Sc., A.R.C.S., Research Chemist, The British Aluminium Co., Ltd., Chalfont Park, Gerrards Cross, Bucks.
- BRESSON, Yves, Ing.civ.mines, Chef Métallurgiste, Division Alliages Légers, Compagnie Générale du Duralumin et du Cuivre (CEGEDUR), 66 avenue Marceau, Paris (8<sup>e</sup>), France.
- CLEMENT, Jean Charles, Directeur, Usine de Givet, Compagnie Française des Métaux, Givet (Ardennes), France.
- FREHSE, Josef, Dr.-Ing., Director of Research, Gebr. Böhler & Co., A.G., Kapfenberg, Austria.
- GRAINGER, Leslie, B.Sc.Eng., A.I.M., Head, Metallurgy Division, Atomic Energy Research Establishment, Harwell, Berks.
- HAASEN, Professor Peter, Dr.rer.nat., Professor für Metallkunde, Universität Göttingen, Hospitstrasse 12, Göttingen, Germany.
- HALMOS, George Thomas, Mech.Eng., P.E., Engineer, Aluminium Goods, Ltd., 158 Sterling Road, Toronto 3, Ont., Canada.
- LEWIS, John T., Engineer, The Loewy Engineering Co., Ltd., Wallisdown Road, Bournemouth.
- MICHON, Pierre-Joseph, Ing., Directeur d'Usine, Compagnie Française des Métaux, Serfontaine (Oise), France.
- MOWBRAY, Geoffrey Alwyn, B.Sc., A.I.M., Works Superintendent, Sintered Metal Components, Ltd., Chard, Somerset.
- PERRIN, Paul Henri, Ing., L.èsSc., Directeur, Usine de Coueron, Compagnie Française des Métaux, Coueron (Loire Atlantique), France.
- ROSENDAHL, Carl-Henrik Theodor, Bergsing., Laboratoriefach, Uddeholms AB, Munkfors Bruk, Munkfors, Sweden.
- WEVER, Hans, Dr.rer.nat., Dipl.Chem., Dozent am Institut für Metallkunde, Technische Universität Berlin, Hardenbergerstrasse 35, Berlin-Charlottenburg 2, Germany.

#### *As Junior Members*

- CORDON, Brian Wilfrid, L.I.M., Metallographer, Raleigh Industries, Ltd., Lenton, Nottingham.
- HUDSON, Brian, B.Met., Scientific Officer, Metallurgy Division, Atomic Energy Research Establishment, Harwell, Berks.
- POLLOCK, Derek David John, L.I.M., Metallurgical Laboratory, Raleigh Industries, Ltd., Lenton, Nottingham.
- ZIA-UL-HAQ, A. H. M., B.Sc.Eng., Technical Assistant, Division of Metallurgy and Ore Dressing, West Regional Laboratories, P.C.S.I.R., Ferozepur Road, Lahore, Pakistan.

#### *As Student Members*

- ALEXANDER, James David, Undergraduate, Department of Metallurgy, University of Sheffield.
- BAKER, Robert, Undergraduate, Department of Metallurgy, University of Sheffield.
- BEHRING, James Arthur, B.S., Instructor, Department of Mining and Metallurgy, University of Wisconsin, Madison, Wis., U.S.A.

- COLEMAN, Edward George, B.S., Student, Department of Mining and Metallurgy, University of Wisconsin, Wis., U.S.A.
- DIXON, Philip Hall, B.Sc., Research Student, Department of Metallurgy, University of Liverpool.
- GITTINS, Anthony, Undergraduate, Department of Metallurgy, University of Sheffield.
- JAKOBI, John Robert, Undergraduate, Department of Metallurgy, University of Sheffield.
- LATKOWSKI, Rajmund, M.Sc., Postgraduate Student, Royal School of Mines, University of London.
- MARGRAVE, Donald, Undergraduate, Department of Metallurgy, University of Manchester.
- MURRAY, Brian David, Student, 37 Maiden Street, Cwmfelin, Maesteg, Glam.
- RAYMOND, J. W., B.S., Research Assistant, Department of Mining and Metallurgy, University of Wisconsin, Madison, Wis., U.S.A.
- RICE, Alan John, Metallurgist, High Duty Alloys, Ltd., Redditch, Worcs.
- VIDOZ, Aldo Erwin, Lic. en Fisica, Research Student, Department of Metallurgy, University of Birmingham.

### PERSONAL NOTES

MAJOR C. J. P. BALL has been elected a Fellow of University College, London.

MR. G. R. BELL has left Powder Metallurgy, Ltd., to become General Manager of the British Division of Wall Colmonoy (Canada), Ltd., Motherwell.

DR. A. F. BROWN, Lecturer in National Philosophy in the University of Edinburgh, has been elected a Fellow of the Royal Society of Edinburgh.

MR. I. A. BUCKLOW has left Imperial Chemical Industries, Ltd., Metals Division, and is now with Metals Research, Ltd., Cambridge.

DR. G. E. CLAUSSEN has joined Arcrods Corp., Sparrows Point, Md., as Director of Research and Welding Engineering.

MR. J. F. G. CONDÉ has taken up an appointment as Principal Scientific Officer in the Industrial Group of the U.K. Atomic Energy Authority, Risley.

MR. W. CRAFTS has been appointed Associate Director—Technology, Union Carbide Metals Co., Niagara Falls, N.Y.

DR. W. L. FINK, since 1943 Head of the Physical Metallurgy Division of Alcoa Research Laboratories, has been appointed to the newly created position of Scientific Coordinator for the laboratories at New Kensington, Pa.

MR. VERNON HARBORD has retired from active partnership in the firm of Riley, Harbord, and Law, but will continue to act as consultant to the firm.

MR. J. S. HOGG has left the Royal College of Science and Technology, Glasgow, and is now with the Scottish Gas Board.

DR. G. JOSEPH has been appointed Lecturer in Physical Chemistry and Head of the Metallographical Laboratory, School of Engineering, University of Chile, Santiago de Chile.

PROFESSOR P. LACOMBE (of Paris) is a visiting Professor in the Department of Metallurgical Engineering at Case Institute of Technology in Cleveland, Ohio, from March to June 1959.

## NEW OFFICERS

He was invited by Professor A. R. Troiano, Head of the Department, to be the first occupant of Case's newly established Republic Steel Corporation Chair of Metallurgy.

MR. N. MACDONALD has been appointed Deputy Chief Production Superintendent at the Milton Works of The British Aluminium Co., Ltd.

M. J.-R. MARÉCHAL has been appointed Director of the Laboratories of the Musée des Antiquités Nationales, Saint-Germain-en-Laye (S. et O.).

MR. S. F. MARTON has left The Mond Nickel Co., Ltd., to take up an appointment as Departmental Head in the Research Laboratories of Renolds Chains, Ltd., Manchester.

DR. T. B. MASSALSKI has resigned his position as lecturer in the Department of Physical Metallurgy at Birmingham University in order to take charge of a Metal Physics Group at the Mellon Institute, Pittsburgh, Pa.

MR. A. G. MOLINDER, has left Uddeholms AB, Munkfors, and is now with Avesta Jernverks AB, Avesta, Sweden.

MR. A. R. POWELL has retired from his position with Johnson, Matthey and Co., Ltd., but will continue to serve as a part-time consultant on research matters.

MR. J. S. PRESTT has left D. Napier and Son, Ltd., Liverpool, to become Lecturer in Metallurgy at the Brunel College of Technology, Acton.

PROFESSOR G. V. RAYNOR, Feeney Professor of Physical Metallurgy in the University of Birmingham, has been elected a Fellow of the Royal Society.

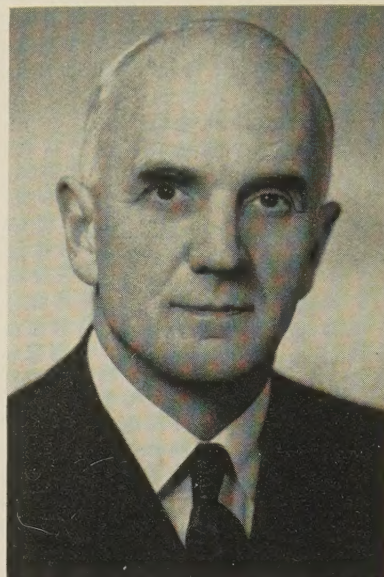
MR. T. D. REES has been appointed Deputy Manager at the Latchford Works of The British Aluminium Co., Ltd.

PROFESSOR F. N. RHINES is now at the College of Engineering, University of Florida, Gainesville, Fla.

DR. D. A. ROBINS, of the Research Laboratories of The General Electric Co., Ltd., has been appointed Chief Metallurgist of the Tin Research Institute.

brass ingots, and he was the joint author with Dr. R. Genders of a monograph on this subject. He has contributed a number of papers to the *Journal of the Institute of Metals*.

He has served on various metallurgical committees of the Ministry of Supply and the Admiralty, on the Inter-Service



Metallurgical Research Council, and on the Non-Ferrous Metals Committee of that Council.

Mr. Bailey was elected a member of the Institute of Metals in 1921 and has served almost continuously since 1940 as a Member of Council or Vice-President.

He was a Founder Member of the Institution of Metallurgists, Honorary Treasurer from 1951 to 1955, and President for the year 1956-57. Mr. Bailey was awarded the C.B.E. in the New Year Honours of 1952.

## NEW OFFICERS

Below are given some biographical details of members who took office as President, Vice-Presidents, and Ordinary Members of Council at the Annual General Meeting on 14 April.

### Mr. G. L. Bailey (President)

George Leo Bailey was educated at King Edward VI Grammar School, Five Ways, Birmingham, and at Birmingham University, where he graduated in metallurgy in 1921. He held a Bowen Research Scholarship in the Metallurgy Department at Birmingham in the year 1921-22 and was awarded the degree of M.Sc. in 1922 for his postgraduate research.

In 1922 he joined the staff of the Metallurgical Branch of the Research Department, Woolwich, where he remained until 1930, when he took up a post with the British Non-Ferrous Metals Research Association. He has been Director of that Association since November 1944, after 14 years in various other posts on the staff.

Mr. Bailey's main research work has been in the field of the casting of metals and alloys, particularly in the casting of

### Professor Hugh Ford (Vice-President)

Hugh Ford was educated at Northampton School, and started his engineering career as a Premium Apprentice in the Great Western Locomotive Works, Swindon. In 1934 he gained a Whitworth Scholarship and entered the City and Guilds College (Imperial College), London, where he obtained the B.Sc.(Eng.)(Lond.) degree with first-class honours, being also awarded the Unwin Scholarship (1936). He received his Ph.D. degree after three years' research on heat-transfer and fluid-flow problems.

From 1939 to 1942 he was a research engineer with Imperial Chemical Industries, Ltd., Alkali Division, Northwich, being mainly concerned with the development of high-pressure plant for polythene manufacture. He was then appointed Chief Engineering Officer in the Technical Department of the British Iron and Steel Federation. In 1945 he became Head of the Mechanical Working Division of the British Iron and Steel Research Association.

In 1948, he accepted the Readership in Applied Mechanics at Imperial College, University of London, and was awarded the D.Sc.(Eng.) degree of London. In 1951 he was appointed to his present post of Professor of Applied Mechanics, University of London.

## NEW OFFICERS

Professor Ford has published over fifty papers in this country and abroad, principally in the field of metal working and mechanical properties of materials. He is a member of

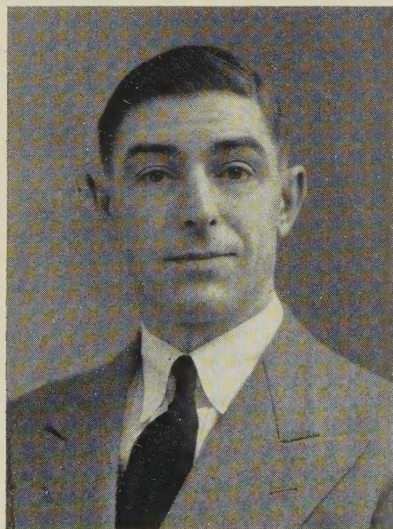


the Research Grants Committee D.S.I.R. and Chairman of the Research Panel of the Admiralty Advisory Committee on Structural Steel. In 1954 he was awarded the W. H. A. Robertson Medal and Premium of the Institute of Metals, jointly with J. G. Wistreich.

Professor Ford has served on the Council since 1956 and has been Chairman of the Metallurgical Engineering Committee since 1956 also.

### **Mr. E. H. Jones** (Vice-President)

Edward Henry Jones was born in 1902 and was educated at Port Talbot County School and Swansea Technical College.



From 1919 he worked in the Laboratory of Vivian and Sons, Swansea, and in 1925 joined Capper Pass and Son, Ltd., becoming Works Manager of the Bristol Works in 1938, a

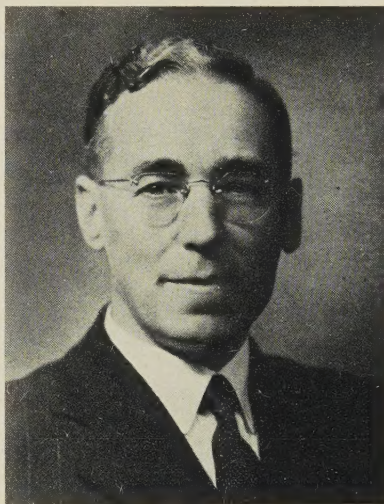
Director of the Company in 1943, and Joint Managing Director in 1954.

He was elected a Member of the Institute of Metals in 1946. He served as a Member of Council from 1950 to 1952, as Honorary Treasurer from 1952 to 1954, and as Vice-President from 1955 to 1958. He is also a Member of Council of the Institution of Mining and Metallurgy.

### **Professor Hugh O'Neill** (Vice-President)

Hugh O'Neill was born at Sheffield in 1899, and graduated M.Met. at the University of Sheffield in 1921, after work at H.M. Factory, Oldbury, from 1917 to 1918, and service in the Royal Engineers in 1918-19. He was awarded the degree of D.Sc. of the University of Manchester in 1929.

He was lecturer in Metallurgy at the Birmingham Technical College in 1920-21, and afterwards a lecturer and later Senior Lecturer in Metallurgy at the University of Manchester from 1921 to 1934. He then became Research Metallurgist to the L.M.S. Railway Company, and was Chief Metallurgist from 1935 until 1947. Since that date he has been Professor of



Metallurgy at University College, Swansea, and was Vice-Principal from 1956 to 1958.

He is author of "The Hardness of Metals and its Measurement" (1934), "Glossary of Terms for Metallurgical Inspection" (1940), and many published scientific papers and articles. He was awarded the Trevithick Premium for a paper to the Railway Division of the Institution of Civil Engineers (1945), and the Price-Abell Medallion of the Derby Society of Engineers (1938). He was twice a Carnegie Scholar of the Iron and Steel Institute and in 1950 visited extraction plants in Canada and the U.S.A. with a Nuffield Travelling Fellowship.

Professor O'Neill was President of the Manchester Metallurgical Society in 1929-30, and, as President of the Swansea Metallurgical Society, was an Honorary Member of Council of the Iron and Steel Institute. He was a member of the old Welding Research Council, the Research Board of the Welding Research Association, and the Council of the British Iron and Steel Research Association. He has been Visitor to the British Cast Iron Research Association on behalf of the

## NEW OFFICERS

Department of Scientific and Industrial Research, and was President of the Institution of Metallurgists in 1952.

In connection with University work, he was a member of the British Committee of World Student Relief. He has given W.E.A. and other adult education courses, and was a co-opted member of Derby Education Committee.

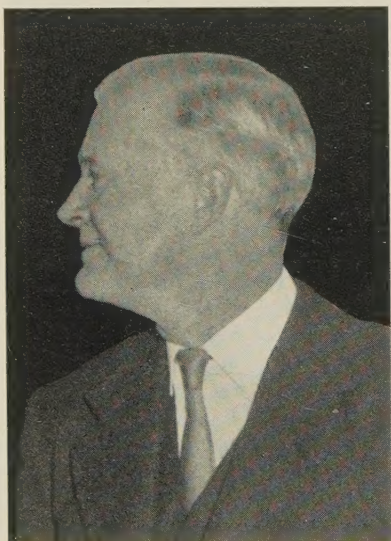
Professor O'Neill was elected a member of the Institute in 1921, and has previously served on the Council from 1946 to 1950, as Vice-President from 1950 to 1953, and again as a Member of Council from 1955 to 1959. He was Chairman of the Institute's Publication Committee from 1949 to 1953, and is the present Chairman of the Metal Physics Committee.

### **Mr. D. P. C. Neave** (Hon. Treasurer)

Digby Percy Cornwall Neave was educated at Wellington College and King's College, Cambridge, where he took an honours degree in engineering. His early career was in the automobile industry, first as a scholarship pupil with the B.S.A.-Daimler Group and later with Morris Motors, Ltd., where he became Assistant Production Manager.

On the formation of the Copper Development Association in 1933, Mr. Neave was appointed as its first General Manager. In 1938-9, he was concerned with the establishment of the International Nickel Company's new Petsamo mine in Arctic Finland. During the war, he became Assistant General Manager of Operations for The Mond Nickel Co., Ltd. Towards the end of the war, he became Joint Managing Director of Imperial Smelting Corporation, Ltd., and later its Managing Director. Following the merger, in 1949, of Imperial Smelting Corporation with the Zinc Corporation, Ltd., he became a Vice-Chairman of the parent company, The Consolidated Zinc Corporation, Ltd., in which position he continued until 1956. His other previous directorships include Mufulira Copper Mines, Ltd., and New Broken Hill Consolidated, Ltd.

Mr. Neave is now Chairman of The British American Metals Co., Ltd., an associate of Anaconda, and is a director of Capper Pass and Son, Ltd., and of The Wolverhampton



Metal Co., Ltd. He is also Deputy Chairman of the Fisons Group of Companies, manufacturers of fertilizers and chemicals. He is a Member of Council and Hon. Treasurer of the

Copper Development Association, a Member of Council of the Zinc Development Association (of which he was Chairman in 1956), and also of the British Non-Ferrous Metals Research Association and of the British Bureau of Non-Ferrous Metals Statistics. He is a member of the Tin Research Institute's Technical Committee. He has also been a co-opted member of the Cambridge University Appointments Board.

Mr. Neave has been a member of the Institute since 1933 and has served on the Council from 1947 to 1951 and from 1955 to 1959. He is a Member of the Institution of Mechanical Engineers and a Member of the Institution of Civil Engineers.

### **Dr. W. O. Alexander** (Ordinary Member of Council)

William Oliver Alexander was born in 1911 and educated in Birmingham at King Edward VI Grammar School, Camp Hill, and the University, where he graduated with a Ph.D. in Metallurgy. From 1933 to 1937 he continued research work at Birmingham University on ternary copper-base alloys and



various alloy systems showing temper-hardening phenomena.

In 1937 he joined Imperial Chemical Industries, Ltd., Metals Division, where he worked as a research metallurgist on copper and copper alloys. In addition to participating in a great deal of effort designed to find and evaluate suitable substitute alloys to further the war effort, he was, from the inception until 1946, engaged on metallurgical problems connected with nuclear energy. He was appointed Deputy Production Manager of the South Wales Factories in 1947, and Production Manager of these factories in 1951.

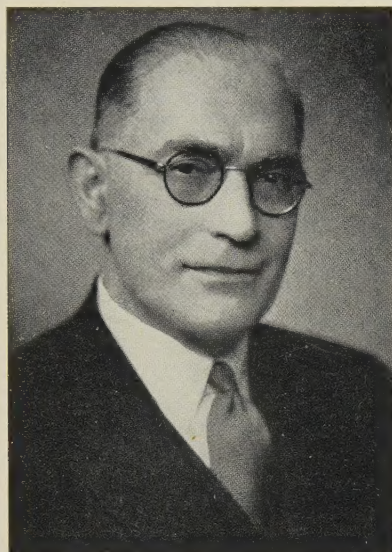
In 1955 he was made Technical Assistant to the President of I.C.I. (New York), Ltd., and returned to the Metals Division in July 1958 to take up his present appointment in the Research Department.

Dr. Alexander is a member of several technical and scientific societies and committees. He is a Vice-President of the Institution of Metallurgists and a Member of the Institution of Production Engineers.

## Dr. N. P. Allen

(Ordinary Member of Council)

Norman Percy Allen graduated in metallurgy at Sheffield University in 1923, and later obtained his M.Met. degree. His work on gases in metals, particularly copper and silver, was started at University College, Swansea, for the British



Non-Ferrous Metals Research Association. This work was continued at the University of Birmingham, where he was a member of the staff of the Metallurgy Department from 1928 to 1935. He obtained his D.Sc. degree for this work in 1934.

Dr. Allen then joined the research staff of The Mond Nickel Co., Ltd., at their Birmingham laboratory, where, amongst other things, he led research teams working on the transformation characteristics, hardenability, and mechanical properties of low-alloy steels, and on the high-temperature properties of nickel-chromium alloys. Investigation of the properties of alloys at elevated temperatures led to the development of the earlier Nimonic creep-resistant alloys.

Since 1944 Dr. Allen has been Superintendent of the Metallurgy Division of the National Physical Laboratory, first with the rank of Deputy Chief Scientific Officer, and recently with that of Chief Scientific Officer. His interests at the N.P.L. have included the deformation and fracture of high-purity iron and iron alloys, the study of improved steels for steam power plant, the creep and fatigue of metals, the metallurgy of the newer metals, and the application of radioactive tracers and electron microscopy to metallurgical problems.

Dr. Allen has been a member of numerous research committees, and is at present Chairman of the J/E Committee of the British Electrical and Allied Industries Research Association dealing with steels for steam turbines. He has been a member of the Iron and Steel Institute and the Institute of Metals for many years; he is a Fellow of the Institution of Metallurgists, and is currently a Vice-President. He represents the Iron and Steel Institute on the Council of the British Iron and Steel Research Association and is a member of the Research Board of the British Non-Ferrous Metals Research Association. He was elected a Fellow of the Royal Society in 1956.

Dr. Allen previously served on the Council of the Institute from 1946 to 1950 and has been Chairman of the Metal Physics Committee.

## Mr. F. Dickinson

(Ordinary Member of Council)

Frank Dickinson was born in 1900 and was educated at Upholland Grammar School, near Wigan, and the Municipal Technical College, Swansea. In 1920, after obtaining an external degree in the Faculty of Engineering (Metallurgy) of London University, he joined the staff of the Metallurgical Branch of the Research Department, Woolwich, under the direction of Dr. Harold Moore, C.B.E.

For 15 years Mr. Dickinson was in charge of research on metallurgical subjects related to armaments, particularly small arms, ammunition, and armour. In 1936 he joined the Research and Development Department of The Mond Nickel Co., Ltd., in London, as Assistant to the Manager, subsequently becoming Assistant Manager in 1945 and Manager in 1955.

Soon after the beginning of World War II, Mr. Dickinson was seconded by his Company for service with the Ministry of Supply, particularly with respect to tank armour and materials for armoured fighting vehicles. He was a Deputy Director of Tank Design, and from 1944 to 1945 he also held the position of Superintendent of Terminal Ballistics in the Armaments



Research Department of the Ministry of Supply at Fort Halstead.

Mr. Dickinson has been a member of the Institute since 1921. He is also a member of the Iron and Steel Institute, and a Fellow of both the Institution of Metallurgists and the Institute of Physics.

## Mr. L. Rotherham

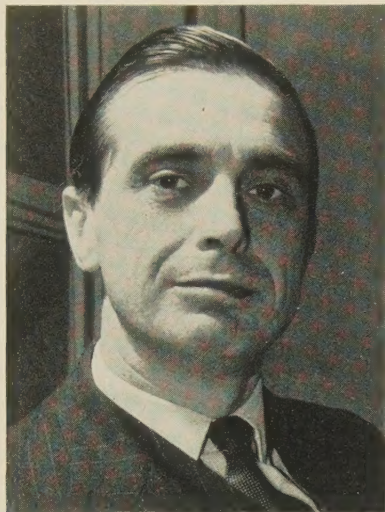
(Ordinary Member of Council)

Leonard Rotherham was born in 1913 and educated at University College, London, where he graduated in 1934. In the following year he was awarded the M.Sc. degree for a

research on the viscosity of liquids carried out under the direction of Professor Andrade.

From 1935 to 1946 Mr. Rotherham was Chief Physicist at the Brown-Firth Research Laboratories, Sheffield. He then became Head of the Metallurgy Department at the Royal Aircraft Establishment, Farnborough. He remained there until 1950, when he was appointed Chief Metallurgist and Director of Research and Development in the Industrial Group of the U.K. Atomic Energy Authority. Last year he took up his present position as Member for Research of the Central Electricity Generating Board.

Mr. Rotherham serves on the Councils of the Electrical Research Association, the British Coal Utilization Research



Association, the British Welding Research Association, and the British Non-Ferrous Metals Research Association. He is also a member of the Scientific Advisory Council of the Minister of Power and a member of the General Board of the National Physical Laboratory.

He joined the Institute in 1948 and is a member of the Nuclear Energy Committee. He is a Fellow of the Institute of Physics and a Fellow and former Vice-President of the Institution of Metallurgists.

Mr. Rotherham has recently been made a Fellow of University College, London.

## OTHER NEWS

### Société Française de Métallurgie

The Autumn Meeting of the Société Française de Métallurgie will take place at the Maison de la Chimie, 28 bis Rue Saint-Dominique, Paris (7<sup>e</sup>), from 19 to 24 October 1959.

The main theme of the meeting will be "Gases in Metals", although there will also be papers on other subjects.

### Postgraduate Course in the Physics and Mechanics of Structural Materials

Applications are invited for a one-year course in the Physics and Mechanics of Structural Materials which begins on 5 October 1959 at the College of Aeronautics. Prospective students must be of graduate status in an appropriate branch

of science or engineering and must have practical experience in one of the fields covered by the course.

The purpose of the course is to give instruction in the analytical methods of the theories of elasticity and plasticity and in the basic theories of the nature of materials derived from the sciences of physics, chemistry, and metallurgy.

Further information and forms of application may be obtained from: The Warden, The College of Aeronautics, Cranfield, Bletchley, Bucks.

### Graduate Course in the Mechanical Working of Metals

A graduate course in the mechanical working of metals is being organized by the Department of Industrial Metallurgy at Birmingham University for the session 1959-60. This follows a successful course in foundry science and engineering held in 1958-59, and it is proposed to hold similar courses every two or three years.

The new course is designed for science graduates who are working in, or proposing to enter, those branches of the metallurgical industry which are concerned with metal working. The course will be of nine months' duration, leading to a Diploma in Graduate Studies, or of one year's duration, leading to a M.Sc. degree.

The normal entrance qualification for the course is a suitable degree in metallurgy, physics, or engineering, or an equivalent professional qualification. In general, it is expected that entrants will have spent two years or more in metallurgical industry, but in suitable instances graduates with less industrial experience will be admitted.

The basic course of lectures and practical work is planned to be completed by full-time study in three terms, i.e. from October 1959 to June 1960.

The inclusive fee for the course is £81. In certain cases where a student is not sponsored by an employer, the University may consider applications for remission of this fee and, where necessary, for the grant of a maintenance allowance.

Forms of application may be obtained from the Registrar, The University, Edgbaston, Birmingham 15, and further information about the course from the Secretary of the Department of Industrial Metallurgy.

### "The Electric Arc in Welding"

A Joining of Metals Conference on "The Electric Arc in Welding" will be held at Birmingham University on 25 June 1959. Papers on the following subjects will be presented: "A Survey of Arc Characteristics and Their Significance in Welding", "Gas Absorption from Arc Atmospheres", "The Mechanism of Metal Transfer in the Welding Arc", "Heat Transfer from Arcs", "Plasma Projectors and Constricted Arc Torches."

Applications for enrolment forms should be addressed to the Secretary, Department of Industrial Metallurgy, The University, Edgbaston, Birmingham 15, and marked "Welding Conference". An enrolment fee of one guinea will be charged, which will include the cost of lunch and refreshments.

### Gordon Research Conference on Physical Metallurgy

A Gordon Research Conference on Physical Metallurgy will be held on 22-26 June 1959 at the Kimball Union Academy, Meriden, N.H. The Conference, which will be under the

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## APPOINTMENTS VACANT

Chairmanship of Professor T. A. Read, will be on the subject of "Transformations in Solids" and same twenty papers are to be presented.

Requests for attendance at the Conference, or for additional information, should be addressed to W. George Parks, Director, Department of Chemistry, University of Rhode Island, Kingston, R.I.

(Research Fellowship) or £1000 to £1200 p.a. (Senior Research Fellowship) with superannuation under F.S.S.U. and family allowance.

In all cases the commencing salary within the prescribed scale will depend upon age, qualifications, and experience. Consideration will be given to candidates' housing requirements. Applications giving full particulars and the names of three referees should be forwarded to the Recorder, The College of Aeronautics, Cranfield, Bletchley, Bucks. Further particulars available.

## IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY

LECTURER IN PHYSICAL METALLURGY required in the Metallurgy Department. Applicants should have proved research ability in physical metallurgy or in metal physics. The appointment will be made as soon as possible and within the scale £900 × £50—£1350 (bar); × £75—£1650 for a lecturer or £700 × £50—£850 for an assistant lecturer; plus £60 London Allowance, F.S.S.U. benefits, and family allowances. Applications should be sent to Professor J. G. Ball, Metallurgy Department, Imperial College, London, S.W.7.

## POWDER METALLURGY

THE MOND NICKEL COMPANY LIMITED requires a Metallurgist to work in its Birmingham Laboratory with a team engaged in the development of a wide range of nickel-containing materials, using powder-metallurgical techniques. Applicants should possess an honours degree or equivalent qualification, have experience in the powder-metallurgical or allied fields, and be capable of working on their own initiative. Individual publication of results is encouraged.

Salary will be in accordance with experience and qualifications. Pension and assurance schemes are in operation and, in appropriate cases, assistance can be given with housing. Applications, which will be treated in confidence, should give details of age, qualifications, and experience and be addressed to The Manager, Development and Research Department, The Mond Nickel Company Limited, Thames House, Millbank, London S.W.1. Mark envelope "Confidential L. 69".

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